

TITLE 10

CHAPTER 25

Wind Energy Systems and Facilities

10.25.010 Purpose:

The purpose of this Chapter (25) is to establish minimum requirements and regulations for the placement, construction and modification of small wind energy systems, commercial wind energy systems, and wind metering towers and equipment, as defined herein, while promoting the safe, effective and efficient use of such systems.

10.25.020 Definitions:

- A. Shadow Flicker:** Alternating changes in light intensity caused by the moving blade of a wind energy system casting shadows on an object, such as a window.
- B. Total Extended Height** means the distance measured from ground level to the tip of the blade, extended at its highest point of travel.
- C. Tower** means the supporting structure on which the turbine is mounted.
- D. Turbine** means that portion of the wind system that is used to capture the energy of the wind and transform it into electrical or mechanical energy. The turbine includes a rotor (blades) and nacelle (generator), and on many wind systems a tail.
- E. Wind Energy System, Large** means a wind energy conversion system consisting of one or more wind turbine(s) and tower(s), with associated control or conversion electronics, which will be used for on-site and/or off-site consumption of power with a rated capacity in excess of 100 kW.
- F. Wind Energy System, Small** means a wind energy conversion system consisting of one or more wind turbine(s), a tower or other support structure, and associated control or conversion electronics with a rated capacity appropriate to the on-site electric usage of the end-use and which will be used primarily to reduce on-site consumption of utility power. A small wind energy system may have a rated capacity of up to 100 kW.
- G. Wind Monitoring Tower and Equipment-Meteorological (Met) Tower** means a tower that houses or supports wind measuring equipment, such as an anemometer, for the purpose of measuring and monitoring wind velocity, duration, intensity, regularity, air temperature and pressure, etc... Met towers are typically permitted only on a temporary basis (2-5 years) to help determine the viability of a wind energy system project; although more permanent met towers may also be considered.
- H. Wind Turbine, Horizontal-Axis (HAWT)** means a wind turbine designed to have the axis of rotation aligned with the direction of the wind, such as with the common propeller type models. These turbines have a rotor revolving about a horizontal axis. They look like a small airplane with a large propeller and no wings, and are the most common variety.

- I. Wind Turbine, Vertical-Axis (VAWT)** means a wind turbine designed to have the axis of rotation perpendicular to the wind direction.

10.25.030 Requirements - Wind Energy System, Small

- A. Permitted Locations and Number.** A small wind energy system that complies with the provisions of this section is permitted only as described in Table of Uses, Washington County Zoning Ordinance.
- B. Minimum Lot Size.** A horizontal-axis small wind energy system may only be erected on a lot that is capable of meeting the setback requirements of this section. A vertical-axis small wind energy system, whether mounted vertically or horizontally, may be erected on a lot that is capable of meeting the setback requirements of this section. The fall zone limits the lot size requirement as the tower does not cross the property line in which it is erected.
- C. Design Standards.**
- 1. Pole or Tower Design.** The design of the small wind energy system may include a monopole/freestanding design, or a guy-wired tower, whether mounted on the ground or on a building.
 - 2. Total Extended Height.** The total extended height of the small wind energy system shall not exceed 35 feet. Otherwise, exceptions to the height limitations shall be approved by the Land Use Authority as a Conditional Use Permit. Sufficient clearance to lower and raise the tower and turbine is to be provided and maintained.
 - 3. Safety.**
 - a. The minimum height of the lowest extent of a turbine blade/rotor shall be 20 feet above the ground, if on a horizontal axis turbine. There is no minimum rotor height for a vertical-axis turbine, provided the blades/rotor must be located or isolated (e.g. fenced) such that they are not easily accessible to anyone but maintenance personnel.
 - b. No tower shall have an external climbing apparatus within 12 feet of the ground. All access doors or access ways to towers and electrical equipment shall be locked when not in use.
 - c. Appropriate warning signage/markings is to be placed on towers, guy wires, and electrical equipment.
 - d. All small wind energy systems must have a manufacturers' maximum RPM (revolutions per minute) rating of less than 500.
 - e. Small wind turbines that are operating erratically shall be shut down and/or lowered to the ground. Examples of erratic operation include but are not limited to the following:
 - (1) Unusual noises such as those indicating failure of bearings.
 - (2) Unusual vibrations such as those indicating that the rotor is out of balance.
 - (3) Falling or loosely hanging parts, such as tail vanes.
 - 4. Setbacks.** In determining the required separation of a small wind energy system from the uses listed, all applicable setbacks are to be followed—where multiple setbacks are applicable, the most restrictive applies.
 - a. Property lines. For safety purposes, a small wind energy system shall be set back

from the nearest property line, public road right-of-way, tanks containing combustible/flammable liquids, and above-ground communication or electrical lines not less than 1.1 times its total extended height if located on a freestanding tower or pole, or if mounted on a building, the distance of the likely fall zone.

Additional setbacks from neighboring residences and residentially-zoned lots are set forth in (C)(5) below.

5. Noise Limitations and Additional Setbacks.

To reduce noise impacts to neighboring residential properties, no small wind energy system or combination of small wind energy systems shall produce noise that exceeds 50 dBA, as measured at the property line of any neighboring residentially-zoned lot not owned by the small wind energy system developer (Note: Public road right-of-way counts towards the setback).

a. **Separation of Multiple Systems:** If more than one small wind energy system is proposed and the setback from a neighboring residence or residential property line is applicable, professional documentation (e.g. a noise study) shall be submitted indicating that the above noise limitations will be met. A situation with multiple small wind energy systems must consider the effects of combined noise levels (may add up to 3 dB) and the appropriate sound propagation calculations (whether line source properties apply to the situation).

b. **Single Systems:** To establish the minimum setback(s) necessary to comply with the above noise limitations in situations of single wind energy systems, the applicant shall provide from a reliable source the noise emission level (a.k.a. noise rating) of the system, as measured at a specified distance from the rotor or tower and at a given wind speed (e.g. 52 decibels at 100 feet from the tower, 30 mph wind). Any noise rating must be based on at least a 10 m/s (22.3 mph) wind speed to qualify for use. If the proposed setback is at least as far as the distance used for the noise rating, and the noise rating is less than the above noise limits, then no further calculations are necessary. Otherwise, the following calculations can be utilized to determine if the proposed setback is sufficient to comply with the above noise limits:

Step 1: Calculate the difference in decibels (dB) that would occur at the neighboring residential property line and/or residence, as applicable, versus the noise level at the distance used for the noise rating statement.

Equation: $\text{dB difference} = 20 \times \text{Log}_{10} \text{ of } (\text{Distance A} / \text{Distance B})$

Where “Distance A” is the distance from the system used to establish the noise rating, and “Distance B” is the proposed distance between the wind energy system and the neighboring residential property line and/or residence. Log_{10} stands for Logarithm to the base 10. (Note: Simplified calculators are available on the internet. The above equation is based on the general rule that sound in the clearly audible frequency range will reduce 6 dB for every doubling of distance from the source, assuming a single source of sound.)

Step 2: The result of the above equation is a negative number, which represents the reduction in decibels from Distance A to Distance B. Subtract the absolute value

(positive equivalent) of that number from the noise rating of the system and compare the answer to the applicable maximum allowable noise level (50 dbA). If the result is less than the maximum allowable noise level, the proposed location is acceptable, provided all other applicable setbacks are met.

In situations where a noise rating is not available on a specific model, the County may either require a noise study to be performed by a qualified professional, or make a conservative estimate based on a wind energy system of similar characteristics (blade type and size, RPM speed, rated output, rotor diameter, start-up speed, etc.) plus a safety factor of 3 dB to establish the required setback.

Compliance with the setbacks established through the above equation shall be deemed sufficient to comply with the noise limitations of this sub-section (C)(5), for permitting and enforcement purposes; provided, failure of the system to operate at or below the rated noise emission level due to worn, damaged, or broken parts, shall constitute non-compliance and the system shall be shut down until repairs are made to bring the system back into compliance. High-wind occurrences may result in noise levels above that calculated, as the noise ratings are based on high, but not extreme wind speeds—noise resulting from such high-wind occurrences does not constitute non-compliance with this section.

If the noise rating is based on 100' from the source, the following table may be used for quick reference. If the noise rating is based on 50' from the source, simply subtract 6 dB from the noise rating and follow the row across to find the setback equivalents. If the noise rating is based on some other distance, use the equation above. (Note: The following table is not applicable to situations with multiple small wind energy systems or to commercial wind energy systems)

dB Rating at 100' from Source	Setback Equivalent of 50 dB, in feet
65	563
64	501
63	447
62	398
61	355
60	317
59	282
58	252
57	224
56	200
55	178
54	159
53	142
52	126
51	113
50	100

49	89
48	79
47	71
46	63
45	56
44	50
43	45
42	40
41	35
40	31
39	28
38	25
37	22
36	20
35	18

6. Visual Standards.

- a. Small wind energy systems are to be finished and maintained as manufactured.
- b. No small wind energy system shall be lighted unless required by the Federal Aviation Administration (FAA). When lighting is required by the FAA, it shall be the red, intermittent, glowing style, rather than the white, strobe style, unless disclosed and justified through the application review process.
- c. No advertising signs of any kind or nature whatsoever shall be permitted on any small wind energy system.
- d. The design of any accessory buildings or related structures shall, to the extent reasonably possible, use materials, colors, textures, screening and landscaping that will blend the facility into the natural setting and existing environment.
- e. The property owner shall reasonably attempt to site the system at a location that minimizes the potential for shadow flicker impacts to their own and neighboring residences.

7. Electrical Interconnections. All electrical interconnection or distribution lines shall be underground and comply with all applicable codes and public utility requirements.

8. Signal Interference. Efforts shall be made to site small wind energy systems to reduce the likelihood of blocking or reflecting television and other communication signals. If signal interference occurs, both the small wind energy system owner and individual receiving interference shall make reasonable efforts to resolve the problem. No small wind energy system shall cause permanent and material interference with television or other communication signals.

9. Overspeed Controls. Every small wind energy system is to be equipped with an automatic overspeed control, braking system, or feathering system.

- a. Small wind turbines must have some positive means of shut-down. Examples of acceptable means for shutting the turbine down include but are not limited to: Dynamic braking (usually accomplished by shorting the alternator phases together); mechanical brakes that show and then lock the rotor.
- b. Small wind turbines must have some means of controlling the rotational speed of the

turbine rotor in high winds. Examples of acceptable means of control include but are not limited to furling mechanically forced yawing, and blade pitch control. VAWT-type small wind turbines, which cannot use the above controls, must still incorporate some other means, such as braking.

10. Fire Protection. All small wind energy systems are to be provided with a defensible space for fire protection, in accordance with the Washington County Wildland-Urban Interface Code.

D. Permit Applications. A building permit is required for a small wind energy system. The application is to include the following information.

1. **A Site Plan**, drawn to scale, showing the location of the proposed small wind energy system; the locations of all existing buildings and structures, dimensioned to the property lines; the location of any septic system, well, utility line or easement, access easement, or any tank containing flammable materials on the property; the area required for raising and lowering the tower; the defensible space area required by the Urban-Wildlands Interface Code; and the applicable setbacks for the small wind energy system.
2. **Noise Compliance Documentation.** Provide the information necessary to demonstrate that the applicable noise requirements of 10.25.030(C)(5) will be met.
3. **Standard drawings.** Engineered plans and calculations shall be required to obtain a building permit for a small wind energy system. Plans and calculations shall be stamped, dated and signed in accordance with Utah state codes, ordinances, and laws governing such actions, by an engineer licensed and in good standing with the state of Utah. Plans and calculations must verify that the structure is designed and capable of withstanding the conditions of the site, including but not limited to wind load, snow load, seismic conditions, and soil conditions, as required by the Washington County Building Department. Soils testing by a qualified soils engineer that is licensed by, and in good standing with, the state of Utah may be required.
4. **Specific information** on the type, model, size, rotor material, rated power output, rated rotor speed, overspeed safety features, and survival wind speed, as well as the name and address of the manufacturer is to be provided. These items are typically included in a specification sheet available from the manufacturer.
5. **A line drawing** of the electrical components of the system in sufficient detail to establish that the installation conforms to all applicable electrical codes.
6. **Net metering agreement.** If the system will be connected to the electricity grid the applicant must provide documentation with the building permit that the required net metering agreement is being considered by the utility company (e.g. work order number status). The fully-executed net metering agreement must be provided to the building inspector prior to operation of a system that will be connected to the grid.

10.25.040 Requirements - Wind Energy System, Large

The following standards shall apply to all large wind energy systems:

- A. Wind Energy Application.** A large wind energy system may be permitted as described in Section 10.23.030, Table of Uses, Washington County Zoning Ordinance.
- B. Design Standards.** A large wind energy system shall comply with the design standards set forth below.
- 1. Pole or Tower Design.** The design of the large wind energy system shall be of monopole or freestanding design with no guy wired towers. No open-lattice style towers are permitted, unless they are entirely clad with a suitable cover, such as an architectural fabric, and engineered to consider the additional forces related to the covering.
 - 2. Minimum Blade Height.** The minimum height of the lowest extent of a turbine blade shall be 30 feet above the ground and 15 feet above any structure or obstacle within the fall zone of the tower.
 - 3. Safety / Access.**
 - a. No tower shall have an exterior climbing apparatus within 12 feet of the ground. All access doors or access ways to towers and electrical equipment shall be locked.
 - b. Appropriate warning signage shall be placed on towers, electrical equipment and wind energy system entrances.
 - 4. Setbacks.** In determining the required separation of a large wind energy system from the uses listed, all applicable setbacks are to be followed—where multiple setbacks are applicable, the most restrictive applies.
 - a. **Project Boundary Lines.** A commercial wind energy system tower shall be set back from all project boundary lines, existing publicly-maintained roads, tanks containing combustible / flammable liquids, and above-ground communication or electrical lines, not less than 1.25 times its total extended height.
 - b. **Other uses.** No large wind energy system shall be located within one-half (½) mile of a park, church, hospital, school, playground, or residentially-zoned lot not owned or leased by the wind energy developer. Additional separation may be required to sufficiently mitigate noise and shadow flicker resulting from the commercial wind energy system.
 - c. **Spacing.** Large wind energy system towers shall be spaced on center no closer than 1.1 times the total extended height.

Additional setbacks from neighboring residences and residentially-zoned lots are set forth in subsequent sections for noise and shadow flicker—(B)(5) and (B)(7)(e).

- 5. Noise.** Except when a professional noise study is submitted that properly demonstrates that the noise thresholds specified below will not be exceeded with a lesser setback, all commercial wind energy turbines shall be located a minimum of 1.25 miles from all existing inhabitable structures (residences, places of work, etc.) and residentially-zoned lots that are not owned or leased by the wind energy developer. Provided, in situations of mountainous topography where the sound could be reflected/channeled towards a residential area, or when the proposed wind turbines are rated more than 3.0 MW, the land use authority may determine that a noise study is warranted to ensure sufficient setbacks to meet the following noise thresholds. With the exception of such an instance, compliance with the 1.25 miles setback shall be deemed sufficient to be in compliance

with the noise restrictions for commercial wind energy systems and a noise study is not needed. A noise study, when required, shall be peer reviewed by an independent qualified party, with the associated costs born by the developer. If a reduced setback is authorized, failure to operate within the noise limits specified constitutes a violation of this ordinance.

Thresholds for Noise Studies:

No large wind energy system shall produce sound at any time, as measured at any neighboring residentially-zoned lot or 100 feet from any existing inhabitable building that is not owned or leased by the wind energy developer, that exceeds the lesser of:

- a) 35 dBA (LAeq);
- b) 5 dB above the pre-existing (L90), nighttime background noise level of the area (measured in contiguous 10-minute intervals), whether measured as dBA (LAeq) or dBC (LCeq);
- c) 55 dBC (LCeq) if measured in a rural environment (outside a Tier I, II or III area);
- d) 60 dBC (LCeq) if measured in a suburban environment (within a Tier I, II or III area);
- e) Provided, a 5 dB penalty shall be applied for amplitude modulation-- meaning the maximum sound threshold is 5 dB less than the amount specified in “a” above.

All procedures relating to sound measurement are to comply with standard professional practices, such as ANSI 12.9, Part 3, and be conducted by qualified acoustical consultants. To avoid errors in the estimates and to properly account for worst-case scenarios of sound generation, the calculations must include the 5 dBA penalty/addition for amplitude modulation (the spike above the average noise level as a blade passes the tower, which is a 5 dBA spike when the blades from two or more turbines are synchronized), the addition of 3 dB for coherent reflection (additional sound reflecting off the ground), and consideration of the additional sound created by turbulent inflow (atmospheric turbulence due to wind shear, etc.).

- 6. Setback and Noise Waivers.** Voluntary waivers or reductions of the setback and noise limits established by 10.25.040(B)(4)(a) and (b), and 10.25.040(B)(5) may be accepted from those neighboring property owners that otherwise would be within a setback required by one or more of these sections. The agreement(s) must specifically state the County setback and/or noise standard(s) being waived or reduced, the extent of the waiver, and be in the form of a legally binding contract or easement between the landowner (including assignees in interest) and the wind energy developer, effective for the life of the project. Notwithstanding any such voluntary agreement between the landowner and the wind energy developer, the agreement shall only be effective and reflected in the County's authorization of the project when it has been reviewed and determined acceptable to the County. The County shall consider the likely impacts and consequences of the waiver or reduction of the setback and/or noise limit, based on the specific circumstances of the situation, in determining whether to grant the request. Any voluntary waiver or reduction agreement must be submitted with the conditional use permit application and if authorized by the County, must be filed with the County Recorder upon issuance of the conditional use permit.

7. Visual Appearance.

- a. Large wind energy systems shall be finished and maintained in color and material as manufactured.
- b. No large wind energy system shall be lighted unless required by the Federal Aviation Administration (FAA). When lighting is required by the FAA, it shall be the red, intermittent, glowing-style, rather than the white, strobe-style, unless disclosed and justified through the application review process.
- c. No advertising signs of any kind or nature shall be permitted on any large wind energy system.
- d. Accessory buildings or related structures shall, to the extent reasonably possible, use materials, colors, and textures that will blend the facility into the existing environment.
- e. Large wind energy systems must be located such that they will not result in any significant amount of shadow flicker on a major public roadway, or on any inhabitable structures or residentially-zoned lots not owned or leased by the wind project developer/lessor, unless an easement to do so is obtained from the affected property owner and presented with the application. A shadow flicker analysis is required with the application if there are any inhabitable structures or residentially-zoned lots not owned or leased by the wind energy developer, or major public roadways, within 1.25 miles of the turbine.
- f. Appropriate landscaping or screening materials may be required to help screen accessory structures from major roads and adjacent residences. Lighting of accessory structures and substations shall be limited to the minimum necessary and full cut-off lighting (e.g. dark sky compliant) may be required for accessory structures when determined necessary to mitigate visual impacts.

8. Electrical Interconnections. All electrical interconnection and distribution lines within the project boundary shall be underground, unless determined otherwise by the planning commission because of severe environmental constraints (e.g. wetlands, cliffs, hard bedrock), and except for power lines within a substation. All electrical interconnections and distribution components must comply with all applicable codes and public utility requirements. Transmission lines (33.5 kV lines and above) coming to or leaving the project may be overhead.

9. Signal Interference. Efforts shall be made to site large wind energy systems to reduce the likelihood of blocking or reflecting television and other communication signals. If signal interference occurs, both the commercial wind energy system owner and individual receiving interference shall make reasonable efforts to resolve the problem. No commercial wind energy system shall cause permanent and material interference with television, cellular, or other communication signals.

10. Fire Protection. All wind energy systems shall have a defensible space for fire protection in accordance with the Iron County Wildland-Urban Interface Code.

C. Permit Applications. An application for a conditional use permit to establish a commercial wind energy system shall include a complete description of the project and documentation to sufficiently demonstrate that the requirements set forth in 10.25.040(B) will be met. Supporting documentation for addressing the review criteria of 10.25.040(D) and 10.25.050(A) is also to be provided. The land use authority may require any information reasonably necessary to determine compliance with this section.

It is preferred that any related conditional use permit applications for substations or transmission lines be considered in conjunction with the conditional use permit application for the large wind energy system; however, if the details of those improvements are not available at the time of application for the large wind energy system, they may be considered later, through subsequent conditional use permit review. At a minimum, the intended route for connecting to the power grid and the alternative locations of any substation shall be disclosed with the application for the large wind energy system.

Due to the complexity of large-scale large wind energy projects, the County may require a development agreement or other appropriate instrument to address taxing, land use, property assessment, and other issues related to the project. For example, the County is interested in preventing large tax shifts that may otherwise be incurred by County residents each year the centrally-assessed wind energy project is depreciated; therefore, cooperation to establish an agreement for payment in lieu of taxes (PILT), or other acceptable solutions may be necessary. A development agreement or substitute agreement may be required as a condition of the permit, and must be approved by the Board of County Commissioners prior to commencing construction.

D. Conditional Use Permit. Following the provisions of Chapter 18, Washington County Code, additional or more thorough consideration shall be given to the following as the County determines whether the project needs to be approved, denied, or conditionally approved:

1. **Project Rationale**, including estimated construction schedule, project life, phasing, and likely buyers or markets for the generated energy.
2. **Siting Considerations**, such as avoiding areas/locations with a high potential for biological conflict such as wilderness study areas, areas of critical environmental concern, county and state parks, historic trails, special management areas or important wildlife habitat; avoiding visual corridors that are designated by the County after analyzing the applicant's wind energy system proposal and considering public hearing comments; avoiding areas of erodible slopes and soils, where concerns for water quality, landslide, severe erosion, or high stormwater runoff potential have been identified; and, avoiding known sensitive historical, cultural or archeological resources.
3. **Site and Development Plans**, which locate and describe the project boundaries, all existing and proposed structures, setbacks, access routes, proposed road improvements, existing inhabitable structures and residentially-zoned lots within 1.25 miles of the project, existing utilities / pipelines / transmission lines, proposed utility lines / structures, existing topography, existing and proposed drainageways, proposed grading, natural vegetation removal, revegetation actions, dust and erosion control, any floodplains or wetlands, and other relevant items identified by county staff or planning commission. All maps and visual representations need to be drawn at an appropriate scale.
4. **Analysis of Local Economic Benefits**, describing estimated: project cost, generated property taxes and local sales taxes, percent of construction dollars to be spent locally, and the number of local construction and permanent jobs.
5. **Visual impacts, appearance and scenic view sheds.** Potential visual impacts include,

but are not limited to, wind towers, rotors, above-ground electrical lines, accessory structures, access roads, utility trenches and installations, and alteration of vegetation. The applicant must provide a viewshed analysis of the project, including visual simulations of the wind energy systems and any significant planned structures or improvements, such as new roads on a hillside or substations. The number of visual simulations shall be sufficient to provide adequate analysis of the visual impacts of the proposal, which shall be from no less than four vantage points that together provide a view from all sides of the project. More visually-sensitive proposals may require analysis from significantly more vantage points, such as different distances and sensitive locations. The Planning Commission may also require a Zone of Theoretical Visibility/ Zone of Visual Impact (ZVI) Analysis, which is a 360-degree computer analysis to map the lands within a defined radius of a location that would likely be able to see an object—in this case the proposed wind energy system (or a portion thereof).

6. **Wildlife habitat areas and migration patterns, including avian and bat data for the project area.** Specifically include information on any use of the site by endangered or threatened species and whether the project is in a biologically significant area. If threatened or endangered species exist, consultation with USDFW will be necessary. A plan for ongoing monitoring after the project is operational for bird, bat, or other wildlife impacts may be required.
7. **Environmental Analysis.** The applicant shall meet all State and Federal guidelines, laws, and regulations.
8. **Solid waste or hazardous waste.** The application must include plans for the spill-prevention, clean-up, and disposal of fuels, oils, and hazardous wastes, as well as collection methods for solid waste disposal. Verification that all construction waste generated from the project has been removed from the area will be required before a certificate of occupancy may be issued.
9. **Height restrictions and FAA Hazard Review.** Compliance with any applicable airport overlay zoning requirements and the ability to comply with FAA regulations pertaining to hazards to air navigation must be demonstrated.
10. **Transportation Plan,** for Construction and Operation Phases. Indicate by description and map what roads the project will utilize during the construction and operation/maintenance phases of the project, along with their existing surfacing and condition. Specify any new roads and proposed upgrades or improvements needed to the existing road system to serve the project (both the construction and O&M periods)—remember to identify needed bridges, culverts, livestock fence crossings (gates and cattleguards), etc. Also identify all areas where modification of the topography is anticipated (cutting/filling) to construct or improve the roadways. Address road restoration or maintenance needs associated with the construction, ongoing maintenance/repair, and potential dismantling of the project. Provide projected traffic counts for the construction period, broken down by the general type/size of vehicles, and identify approximately how many trips will have oversized or overweight loads. The County may require financial guarantees to ensure proper repair/restoration of roadways or other infrastructure damaged or degraded during construction or dismantling of the project. To provide a proper reference for restoration, the “before” conditions of the

roadways and other infrastructure must be documented through appropriate methods such as videos, photos, and written records.

- 11. Public Safety.** Identify and address any known or suspected potential hazards to adjacent properties, public roadways, communities, aviation, radar systems, etc. that may be created by the project.
- 12. Noise limitations.** Submit sufficient information regarding noise, so as to demonstrate compliance with 10.25.040(B)(5).
- 13. Shadow flicker.** Identify the potential of any shadow flicker effects from the project and provide sufficient documentation to demonstrate compliance with 10.25.040(B)(7)(e).
- 14. Telecommunications interference.** Demonstrate that the potential for adverse electromagnetic fields and communications interference generated by the project has been evaluated and determined unlikely—conduct a Licensed Microwave Search and Worst Case Fresnel Zone (WCFZ) Analysis, including consultations with the National Telecommunications Information Administration (NTIA), Interdepartmental Radio Advisory Committee (IRAC) and the National Weather Service.
- 15. Agreement/easement for life of the project and final reclamation.** If the land on which the project is proposed is to be leased, rather than owned, by the wind development company, all property within the project boundary must be included in a recorded easement(s), lease(s), or consent agreement(s) specifying the applicable uses for the duration of the project.

Also describe the decommissioning and final land reclamation plan to be followed after the anticipated useful life, or abandonment, or termination of the project, including evidence of an agreement or other commitment (i.e. bond and/or sinking fund) with affected parties (county, any lessor or property owner, etc.) that ensures proper final reclamation of the wind energy project, as well as repairing any road impacts associated with the work. All required leases, easements, bonds, or other agreements between the wind development company and the affected parties must be in place prior to commencing construction, unless specified otherwise by the conditional use permit.

- 16. Other probable and significant impacts,** as identified through the review process.

10.25.050 Requirements of Wind Monitoring Tower and Equipment (Met Tower)

- A. Permissible Locations.** A wind monitoring tower may be located as described in Section 10.25.030, Table of Uses, Washington County Code; provided, a wind monitoring tower may be permitted only when it is for the purpose of investigating the feasibility of a small wind energy system, and when the monitoring tower complies with the height and setback requirements for small wind energy systems, as identified in Sections 10.25.030(C)(2) and (4).
- B. Permit application.** A Wind Monitoring Tower and associated equipment may be permitted subject to the following:

1. **Owner Consent:** Evidence that the applicant is the owner of the property, or has written permission of the owner(s) to make such application.
2. **Use Duration:** Typically permitted for a maximum of 5 years, as specified in the permit, and as determined by evidence given at the time of application regarding known wind source data.
3. **Height:** The allowable height of a monitoring tower not otherwise limited by 25.050(A) will be established through the Conditional Use Permit review.
4. **Setbacks:** The setbacks for a met tower from the exterior property lines of the project, publicly maintained road rights-of-way, above-ground communication or electrical lines, and tanks containing combustible/flammable liquids shall be at least 1.1 times its total height.
5. **Tower Security:** Any climbing apparatus must be located at least 12 feet above the ground and the tower must be designed to prevent climbing within the first 12 feet; or, the tower must be protected by an 8-foot tall security fence. The tower is recommended to be enclosed with an appropriate fence when there is OHV or livestock use in the area.
6. **Other:** As determined by County Staff and/or Planning Commission, other significant health, safety and general welfare issues may need to be addressed.

10.25.060 Non Use

- A. Any small wind energy system or large wind energy system that has been permitted by this ordinance which is not used for one (1) year, excluding up to six months for repairs, shall be removed within the following six months. Failure to remove the system shall be deemed a violation of this ordinance.
- B. Any small wind energy system or large wind energy system which is non-conforming with this ordinance and which is not operable for one year shall be removed within the following six months. Failure to remove the system shall be deemed a violation of this ordinance.

10.25.070 Applicability

The requirements of this ordinance shall apply to all small wind energy systems and large wind energy systems proposed after the effective date of this ordinance. Wind energy systems for which a required permit has been properly issued prior to the effective date of this ordinance shall not be required to meet the requirements of this ordinance; provided, however, that any such system shall be installed and functioning within 24 months of the date of the permit. Any system that has been installed but not used for two consecutive years may not be subsequently used without meeting the requirements of this ordinance. No preexisting system shall be altered in any manner that would increase the degree of nonconformity with the requirements of this ordinance and no alterations shall be made to a nonconforming preexisting system during its life which exceeds 50% of its fair market value. If such system is destroyed or damaged to the extent of more than 50 % of its fair market value at the time of destruction or damage, it shall not be reconstructed except in conformity with this ordinance.